

NAME

Key

Multiplying Integers

Directions:

- Use a calculator to calculate the product of each of the problems in the table below.
- Then use the table to record the sign (+ or -) of each number of the problem and its product.

	Sign of 1 st #	Sign of 2 nd #	Sign of Product
$3 \cdot -2 = -6$	+	-	-
$5 \cdot 6 = 30$	+	+	+
$-6 \cdot 7 = -42$	-	+	-
$-9 \cdot -4 = 36$	-	-	+
$2 \cdot 10 = 20$	+	+	+
$-3 \cdot -7 = 21$	-	-	+
$-1 \cdot 8 = -8$	-	+	-
$6 \cdot -4 = -24$	+	-	-

What patterns do you notice?

When multiplying

- 2 neg = +
- 2 + = +
- 1 of each = neg

(We will discuss the rule as a class.)

Rule:

$+$ • $+$ = $+$
 $-$ • $-$ = $+$
 $-$ • $+$ = $-$
 $+$ • $-$ = $-$

Multiplication Madness

Puzzle 41

Look at patterns of integer multiplication:

1. $6 \cdot -18 = \underline{-108}$
2. $(-2 \cdot 5) \cdot 3 = \underline{-30}$
3. $(4 \cdot -6) \cdot 7 = \underline{-168}$
4. $(8 \cdot 9)(2 \cdot -1) = \underline{-144}$
5. Each problem above has one negative factor.
6. Each product is neg.
7. $-17 \cdot -3 = \underline{51}$
8. $(-6 \cdot 5) \cdot -8 = \underline{240}$
9. $(9 \cdot -2)(-3 \cdot 1) = \underline{54}$
10. $(-4 \cdot -7)(2 \cdot 2) = \underline{112}$
11. Each problem above has two negative factors.
12. Each product is +
13. $(-5 \cdot -4) \cdot -7 = \underline{-140}$
14. $-3 \cdot (-8 \cdot -2) = \underline{-48}$
15. $(-3 \cdot -4)(-2 \cdot 8) = \underline{-192}$
16. $(-10 \cdot 1)(-7 \cdot -1) = \underline{-70}$
17. Each problem above has 3 negative factors.
18. Each product is neg.
19. $(-3 \cdot -5)(-2 \cdot -2) = \underline{60}$
20. $(-9 \cdot -1)(-4 \cdot -3) = \underline{108}$
21. $(-6 \cdot -1)(-4 \cdot -11) = \underline{264}$
22. $(-20 \cdot -5)(-3 \cdot -6) = \underline{1800}$
23. Each problem above has 4 negative factors.
24. Each product is +
25. Draw a conclusion about the product of positive and negative integers.
when multiplying: even # of neg = +
odd # of neg = -
26. $-1 \times -2 \times -3 \times -4 \times -5 \times -6 = \underline{720}$